AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

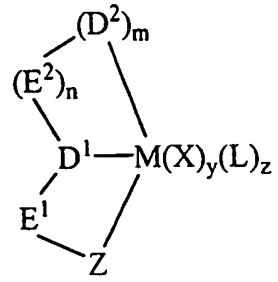
1-34 (cancelled).

35 (new). A polymerisation catalyst comprising

(1) a transition metal compound having the following Formula A, and optionally

(2) an activating quantity of a suitable activator,

Formula A



wherein Z comprises a five-membered heterocyclic group, the five membered heterocyclic group containing at least one carbon atom, at least one nitrogen atom and at least one other hetero atom selected from nitrogen, sulphur and oxygen, the remaining atoms in said ring being selected from nitrogen and carbon; M is a metal from Group 3 to 7 of the Periodic Table or a lanthanide metal; E^1 and E^2 are divalent groups independently selected from (i) aliphatic hydrocarbon, (ii) alicyclic hydrocarbon, (iii) aromatic hydrocarbon, (iv) alkyl substituted aromatic hydrocarbon (v) heterocyclic groups and (vi) heterosubstituted derivatives of said groups (i) to (v); D^1 and D^2 are donor atoms or groups; the divalent groups E^1 and E^2 are not linked other than through the donor atom or group D^1; X is an anionic group, L is a neutral donor group; n = m =

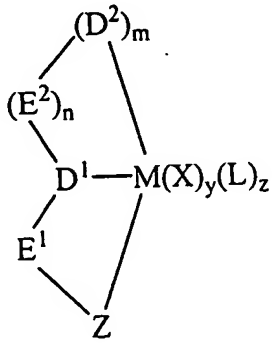
zero or 1; y and z are independently zero or integers such that the number of X and L groups satisfy the valency and oxidation state of the metal M.

36 (new). A polymerisation catalyst as claimed in claim 35 wherein the five membered heterocyclic group contains at least 3 carbon atoms in its ring.

37 (new). A polymerisation catalyst as claimed in claim 35 comprising

(1) a transition metal compound having the following Formula A, and optionally

(2) an activating quantity of a suitable activator,



Formula A

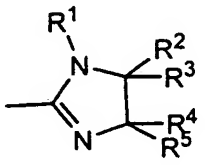
wherein Z is specifically an imidazole-containing group; M is a metal from Group 3 to 7 of the Periodic Table or a lanthanide metal; E^1 and E^2 are divalent groups independently selected from (i) aliphatic hydrocarbon, (ii) alicyclic hydrocarbon, (iii) aromatic hydrocarbon, (iv) alkyl substituted aromatic hydrocarbon (v) heterocyclic groups and (vi) heterosubstituted derivatives of said groups (i) to (v); D^1 and D^2 are donor groups; the divalent groups E^1 and E^2 are not linked other than through the donor atom or group D^1; X is an anionic group, L is a neutral donor group; n = m = zero or 1; y

and z are independently zero or integers such that the number of X and L groups satisfy the valency and oxidation state of the metal M.

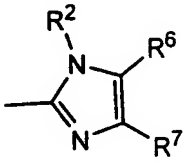
38 (new). A polymerisation catalyst as claimed in claim 35 wherein D^1 and / or D^2 are an imidazole-containing group.

39 (new). A polymerisation catalyst as claimed in claim 37 wherein D^2 and Z are identical imidazole containing groups.

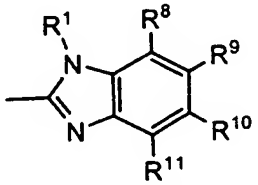
40 (new). A polymerisation catalyst as claimed in claim 37 wherein the imidazole-containing group Z is selected from a group of Formula I, II or III



Formula I



Formula II

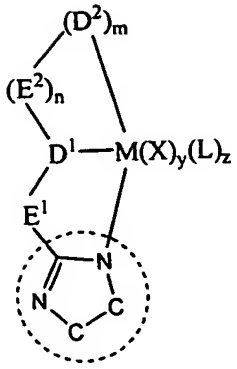


Formula III

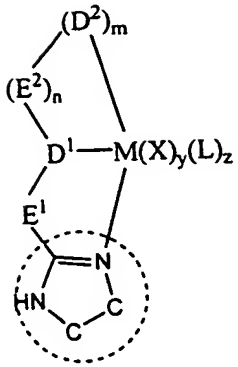
R^1 to R^{11} are independently hydrogen or a monovalent (i) aliphatic hydrocarbon, (ii) alicyclic hydrocarbon, (iii) aromatic hydrocarbon, (iv) alkyl substituted aromatic hydrocarbon (v) heterocyclic groups, (vi) heterosubstituted derivatives of said groups (i) to (v), and (vii) hydrocarbyl-substituted heteroatom groups.

41 (new). A polymerisation catalyst as claimed in claim 35 wherein the transition metal compound has the following Formula B or C

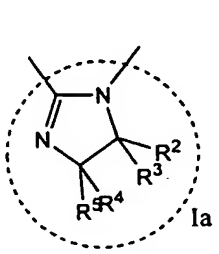
Formula B



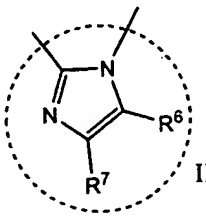
Formula C



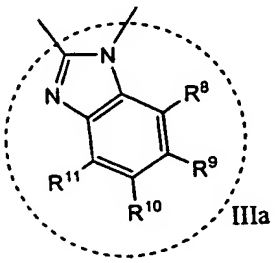
wherein the imidazole nucleus shown within the dotted circle is selected from the divalent groups represented by the Formulae Ia, IIa, IIIa, IVa, Va and VIa,



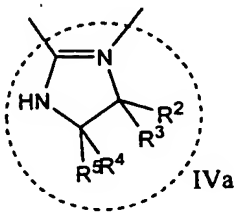
Ia



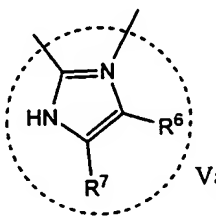
IIa



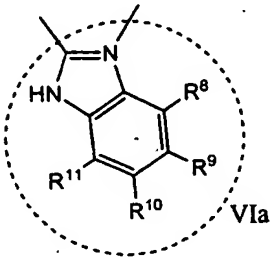
IIIa



IVa



Va



VIa

wherein M is a metal from Group 3 to 7 of the Periodic Table or a lanthanide metal; E^1 and E^2 are divalent groups independently selected from (i) aliphatic hydrocarbon, (ii) alicyclic hydrocarbon, (iii) aromatic hydrocarbon, (iv) alkyl substituted aromatic hydrocarbon (v) heterocyclic groups and (vi) heterosubstituted derivatives of said groups (i) to (v); D^1 and D^2 are donor groups; the divalent groups E^1 and E^2 are not linked other than through the donor atom or group D^1; X is an anionic group, L is a

neutral donor group; n = m = zero or 1; y and z are independently zero or integers such that the number of X and L groups satisfy the valency and oxidation state of the metal M, wherein the groups R^2 to R^{11} are independently hydrogen or a monovalent (i) aliphatic hydrocarbon, (ii) alicyclic hydrocarbon, (iii) aromatic hydrocarbon, (iv) alkyl substituted aromatic hydrocarbon (v) heterocyclic groups, (vi) heterosubstituted derivatives of said groups (i) to (v), and (vii) hydrocarbyl-substituted heteroatom groups.

42 (new). A polymerisation catalyst as claimed in claim 35 wherein E^1 and E^2 are independently selected from $-CH_2-$, $-CH_2CH_2-$, $-CH_2CH_2CH_2-$, 1,2-phenylene, *trans*-1,2-cyclopentane, *trans*-1,2-cyclohexane, 2,3-butane, 1,1'-biphenyl, 1,1'-binaphthyl, and $-Si(Me)_2-$.

43 (new). A polymerisation catalyst as claimed in claim 35 wherein D^1 and D^2 are selected from oxygen, sulfur, an amine of formula $-N(R^{12})-$ or a phosphine of formula $-P(R^{13})-$ wherein R^{12} and R^{13} are hydrogen or (i) aliphatic hydrocarbon, (ii) alicyclic hydrocarbon, (iii) aromatic hydrocarbon, (iv) alkyl substituted aromatic hydrocarbon (v) heterocyclic groups, (vi) heterosubstituted derivatives of said groups (i) to (v), (vii) hydrocarbyl-substituted heteroatom groups and (viii) an imidazole-containing group.

44 (new). A polymerisation catalyst as claimed in claim 35 wherein M is selected from Sc, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo and W.

45 (new). A polymerisation catalyst as claimed in claim 35 wherein the anionic group X is selected from a halide, a hydrocarbyl group, a carboxylate, an oxide; an amide; an alkoxide; an acetylacetonate; and a hydroxyl.

46 (new). A polymerisation catalyst as claimed in claim 35 wherein X is a non-coordinating or weakly-coordinating anion.

47 (new). A polymerisation catalyst as claimed in claim 35 wherein the neutral donor group L is selected from an ether, an amine, a phosphine, an olefin, water and a neutral, conjugated or nonconjugated diene,

48 (new). A polymerisation catalyst as claimed in claim 35 wherein the optional activator (2) is selected from organoaluminium compounds and organoboron compounds and mixtures thereof.

49 (new). A polymerisation catalyst as claimed in claim 48 wherein the optional activator (2) is selected from trimethylaluminium, triethylaluminium, tributylaluminium, tri-octylaluminium, ethylaluminium dichloride, diethylaluminium chloride, tris(pentafluorophenyl)aluminium, alumoxanes, dimethylphenylammoniumtetra(phenyl)borate, trityltetra(phenyl)borate, triphenylboron, dimethylphenylammonium tetra(pentafluorophenyl)borate, sodium tetrakis[(bis-3,5-trifluoromethyl)phenyl]borate, $H^+(OEt_2)$[(bis-3,5-trifluoromethyl)phenyl]borate, trityltetra(pentafluorophenyl)borate and tris(pentafluorophenyl) boron.

50 (new). A polymerisation catalyst as claimed in claim 35 wherein the optional activator is provided by a Lewis acid selected from

(a) ionic-bonding compounds having a $CdCl_2$ type or a CdI_2 type of layered crystal structure;

(b) clays, clay minerals, or ion-exchange layered compounds;

(c) heteropoly-compounds; and

(d) halogenated lanthanoid compounds.

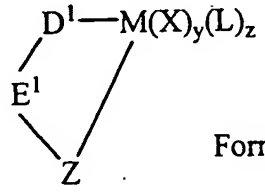
51 (new). A polymenisation catalyst as claimed in claim 35 wherein the optional activator is provided by a catalyst support-activator agglomerate comprising a composite of (A) at least one inorganic oxide component selected from SiO_2, $A1_2O_3$, MgO, $AlPO_4$, TiO_2, ZrO_2, and Cr_2O_3 and (B) at least one ion containing layered material comprising a smectite.

52 (new). A polymerisation catalyst as claimed in claim 35 wherein there is present a promoter comprising a halogenated organic compound.

53 (new). A polymerisation catalyst as claimed in claim 52 wherein the promoter is selected from carbon tetrachloride, hexachloroethylene, benzylbromide, benzylchloride, ethyl trichloroacetate and 2,3- or 1,3-dichloropropylene, chloroform ($CHCl_3$) and n-butylchloride.

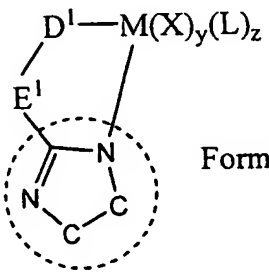
54 (new). A polymerisation catalyst as claimed in claim 53 wherein the transition metal is vanadium.

55 (new). A polymerisation catalyst as claimed in claim 35 wherein m and n are zero in Formula A so that the transition metal compound is of Formula D

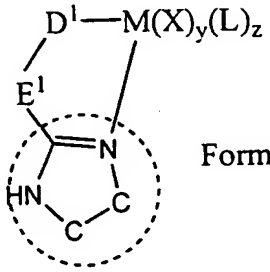


Formula D

56 (new). A polymerisation catalyst as claimed in claim 35 wherein m and n are zero in Formula A so that the transition metal compound is of Formula E or Formula F

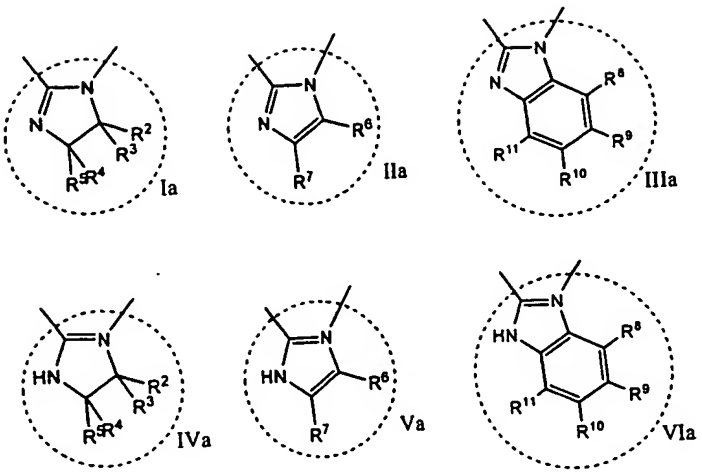


Formula E



Formula F

and wherein the imidazole nucleus within the dotted circle is selected from the divalent groups represented by the Formulae Ia, IIa, IIIa, IVa, Va and VIa as follows:



57 (new). A polymerisation catalyst as claimed in claim 35 wherein in addition to the defined catalyst there is present one or more other catalysts for polymerising 1-olefins.

58 (new). A polymerisation catalyst as claimed in claim 35 wherein in addition to the defined catalyst there is present one or more other transition metal catalysts selected from Ziegler-Natta catalyst systems, metallocene-based catalysts, or heat activated supported chromium oxide catalysts.

59 (new). A supported catalyst comprising the polymerisation catalyst defined in claim 35 and a support material.

60 (new). A process for the polymerisation and copolymerisation of 1-olefins, cycloolefins or dienes, comprising contacting the monomeric olefin under polymerisation conditions with the polymerisation catalyst claimed in claim 35.

61 (new). A process as claimed in claim 60 wherein the process is for the

homopolymerisation of 1-olefins and wherein the monomer is selected from ethylene, propylene, butene, hexene, and styrene.

62 (new). A process as claimed in claim 60 wherein the process is for the copolymerisation of 1-olefins and wherein the monomer is selected from ethylene, propylene, 1-butene, 1-hexene, 4-methylpentene-l, octane, methyl methacrylate, methyl acrylate, butyl acrylate, acrylonitrile, vinyl acetate, vinyl chloride, and styrene.

63 (new). A process as claimed in claim 60 comprising the copolymerisation of ethylene and or propylene with comonomers selected from 1-butene, 1-hexene, 4-methylpentene-1, methyl methacrylate, methyl acrylate, butyl acrylate, acrylonitrile, vinyl acetate, and styrene, diene, cyclic olefin, norbomene and substituted norbomene.

64 (new). A process as claimed in claim 60 wherein the catalyst is supported on a support material selected from silica, alumina, zirconia, talc, kieselguhr, magnesia, magnesium chloride and polymers.

65 (new). A process as claimed in claim 60 wherein the process is carried out under gas phase, slurry phase or solution phase polymerisation conditions.

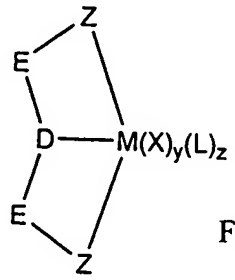
66 (new). A process as claimed in claim 60 wherein the process is carried in the presence of hydrogen gas to modify the average molecular weight of the produced polymer.

67 (new). A process for oligomerisation and cooligomerisation of 1-olefins, comprising contacting the monomeric olefin under oligomerisation conditions with the catalyst claimed in claim 35.

68 (new). A polymerisation catalyst comprising

(1) a transition metal compound having the following Formula AI, and optionally

(2) an activating quantity of a suitable activator,



Formula A1

wherein Z is specifically an imidazole-containing group; M is a metal from Group 3 to 7 of the Periodic Table or a lanthanide metal; B is a divalent group independently selected from (i) aliphatic hydrocarbon, (ii) alicyclic hydrocarbon, (iii) aromatic hydrocarbon, (iv) alkyl substituted aromatic hydrocarbon (v) heterocyclic groups and (vi) heterosubstituted derivatives of said groups (i) to (v); D is a donor group; the divalent groups E are not linked other than through the donor group D; X is an anionic group, L is a neutral donor group; y and z are independently zero or integers such that the number of X and L groups satisfy the valency and oxidation state of the metal M.